Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A rate of change of current sensor comprising a coil for coupling the flux from a conductor in which rate of change of current is to be sensed, the coil comprising a plurality of turns, each turn being a track on a printed circuit board, each turn being displaced from its neighboring turn in a direction parallel to the direction of the conductor.

2. (Original) A sensor according to claim 1 wherein the printed circuit board has at least a first layer and a second layer, each turn comprising a first part of the turn on the first layer and a second part of the turn on the second layer, the first and second parts of the turn being connected by a via extending through the printed circuit board.

3. (Original) A sensor according to claim 1 wherein the turns are rectangular, circular or hexagonal in shape.

4. (Original) A sensor according to claim 1 further comprising a feature provided on the printed circuit board to hold the conductor in place relative to the coil.

5. (Original) A sensor according to claim 1 wherein the conductor is formed on or comprises a layer of the printed circuit board.

6. (Original) A sensor according to claim 2 wherein the conductor is a split conductor having at least two limbs each of which runs close to vias of either side of the coil.

7. (Original) A sensor according to claim 1 wherein two coils are provided on the printed circuit board, the conductor extending between the two coils.

8. (Original) A sensor according to claim 1 wherein each turn of the coil is of the same dimension as the other turns.

9. (Original) A switched reluctance drive including a motor having a rotor defining a plurality of rotor poles, a stator defining a plurality of stator poles, and at least one conductor comprising a phase winding for exciting two or more of the poles, and a sensor connected to sense the rate of change of current in at least one phase winding, the sensor comprising a coil for coupling the flux from the conductor, the coil comprising a plurality of turns, each turn being a track on a printed circuit board, each turn being displaced from its neighboring turn in a direction parallel to the direction of the conductor.

10. (Original) A switched reluctance drive as claimed in claim 9 wherein the output of the sensor is fed to a circuit which detects the point at which the rate of change of current crosses zero.

11. (Original) A switched reluctance drive as claimed in claim 10 wherein the output of the sensor is used to provide rotor position information.

12. (Original) A switched reluctance drive including a motor having a rotor defining a plurality of rotor poles, a stator defining a plurality of stator poles, and at least one conductor comprising a phase winding for exciting two or more of the poles, and means for sensing the rate of change of current in at least one phase winding, the means for sensing comprising means for coupling the flux from the conductor, the means for coupling comprising a plurality of turns, each turn being a track on a printed circuit board, each turn being displaced from its neighboring turn in a direction parallel to the direction of the conductor.

13. (Original) The switched reluctance drive as claimed in claim 12 wherein the means for coupling comprises a coil.

14. (Original) A switched reluctance drive as claimed in claim 12 wherein the output of the means for sensing is fed to a circuit which detects the point at which the rate of change of current crosses zero.

15. (Original) A switched reluctance drive as claimed in claim 14 wherein the output of the means for sensing is used to provide rotor position information.

16. (Previously Presented) A sensor according to claim 1 wherein each turn is a single wind of the coil.

17. (Previously Presented) A sensor according to claim 16 wherein the printed circuit board has at least a first layer and a second layer, further wherein only half of each wind is on the first layer and only half of each wind is on the second layer, such that the first layer includes a plurality of half-winds and the second layer includes a plurality of half-winds.

18. (Previously Presented) A sensor according to claim 1 wherein the conductor defines an axis along which current in the conductor flows, the sensor further comprising a plurality of said vias extending through the printed circuit board, said plurality of vias as viewed in cross section together forming a line of vias extending in a direction parallel to said axis.

19. (Previously Presented) A sensor according to claim 18 wherein the plurality of vias as viewed in cross section together form a pair of lines of vias, each line of vias extending in a direction parallel to said axis.

20. (Previously Presented) A sensor according to claim 1 wherein each turn forms a staggered overlap with adjacent turns of the coil.

21. (Previously Presented) A sensor according to claim 2 further comprising a plurality of said vias extending through the printed circuit board, the plurality of vias forming a line of vias extending in a direction parallel to the direction of the conductor.

22. (Previously Presented) A sensor according to claim 2 further comprising a plurality of said vias extending through the printed circuit board, the plurality of vias forming a pair of lines of vias, each line of vias extending in a direction parallel to the direction of the conductor.

23. (New) A sensor according to claim 5 wherein the conductor is formed on or comprises a layer of the printed circuit board without passing through the printed circuit board.